STATEMENT OF WORK

Analysis of Ozone Depleting Substances and Substitutes

Disclaimer:

Please note that this record provides the statement of work (SOW) from the current contract to help enhance competition. This information should not be relied upon for proposal preparation. Contractors are cautioned to prepare their proposal in accordance with the SOW in the solicitation when it is released."

Title: Analysis of Ozone Depleting Substances and Substitutes

I. BACKGROUND, PURPOSE AND SCOPE

This Statement of Work prescribes analyses in support of policy and programmatic decisions in the environmental area of monitoring and controlling consumption and emissions of ozone depleting substances (ODSs) and their substitutes. The technical analyses required involves frequent updating, upgrading, and running of emissions and economic models.

The United Nations Framework Convention on Climate Change (UNFCCC) establishes guidelines for the preparation of National Communications by Annex I Parties. Under these guidelines, Annex I Parties are asked to provide national inventories of anthropogenic emissions by sources and removals by sinks of certain greenhouse gases. These greenhouse gases include high global warming potential (GWP) substances such as hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs), which are used as substitutes to ODSs. Determining the emissions of these chemicals requires modeling of actual uses, estimation of emission rates at various events, and projection of these emissions by end-use and specific emission source. The Agency has already developed and implemented a set of models, including one referred to as the "Vintaging Model," and methodologies for the estimation of these emissions. This Statement of Work continues to implement and improve such models and methodologies in satisfying the UNFCCC requirements for inventorying and projecting emissions of these gases in the U.S.

EPA commissioned initial development of the Vintaging Model in the 1990s. EPA owns the Vintaging Model and the data produced as a result of running the model. The contractor shall obtain approval from the COR before allowing access to the model, or any model developed or improved under this task order, or their data, to anyone other than contractor personnel or EPA key personnel for this task order.

These models also provide a baseline tool for tracking the phaseout of ODSs and introduction of substitutes in the U.S. and can be used to extrapolate trends worldwide. This Statement of Work provides for such analyses in support of programmatic and policy decisions to support the mission of the Agency and the Stratospheric Protection Division.

II. STATEMENT OF WORK REQUIREMENTS AND DELIVERABLES

Task 1: Contract Management

The Contractor shall prepare a Workplan after receipt of a request for a proposal from the Contract Officer (CO). The Workplan shall outline, describe and include the technical approach, resources, timeline and due dates for deliverables, a detailed cost estimate by task, and a staffing plan. The CO and the Contracting Officer's Representative (COR) will review the Workplan and suggest revisions and/or changes as necessary. Approvals of Workplans will be forwarded to the CO for signature before sending to the Contractor. In all cases, the CO shall approve or disapprove the Workplan. The Contractor shall prepare the revised Workplan incorporating the CO's comments, if any.

Each month, the Contractor shall prepare a monthly progress report. The progress report must describe work accomplished, deliverables provided, staff hours worked, and budget expended in detail for each task in this task order, as well an overview of level of effort and dollars expended for the entire task order.

Task 1 Deliverables	**Due Date**
Proposed Workplan	Within 10 business days of receipt of notice of contract award from CO.
Revised Workplan (if necessary)	Within 10 business days of receipt of comments from CO & COR.
Monthly Progress Reports	Due the first business day on or after the 15th of each month following the subject month.

Task 2: Develop and/or Improve Model Functionality for Estimating U.S. Emissions of Ozone-Depleting Substances (ODS) and ODS Substitutes

The Contractor shall develop new or utilize existing models to estimate emissions of ODS Substitutes in the U.S. Estimates should be developed from a bottom-up perspective, disaggregated by separate sectors and/or end-uses. Estimates of consumption and emissions, by chemical, by year, are required. Estimates should be available reflecting back in time and projecting forward to at least 2050. The model shall use methodologies provided by relevant UNFCCC guidelines or, where different, the Contractor shall explain why a different methodology was chosen. The model(s) shall be developed to provide estimates of consumption and emissions both under current circumstances (i.e., with the Significant New Alternatives Policy (SNAP) program and other Clean Air Act (CAA) regulatory actions) and under circumstances without related regulation (i.e., without the SNAP program and other CAA actions).

The Contractor shall document the sources and assumptions used to provide input data to the model, as well as additional sources for similar data or data to be used to check the accuracy

of the model. Under technical direction from the Contracting Officer's Representative (COR), the Contractor shall provide a thorough and detailed report, spreadsheet or database delineating all data inputs, assumptions and model output. For budgeting purposes, it is assumed that two complete input/output reports would be required during the year.

The Contractor shall anticipate COR technical direction for, and/or propose as needed, changes to the model to improve model functionality and flexibility as well as to improve the ability to compare the model to other information available. Such changes could be "structural" in nature, including the revision of emission estimating methodologies to better reflect consumption and emission points, or could be "organizational" in nature, including disaggregation of existing sectors or end-uses into sub-sectors or sub-end-uses, or development and implementation within the model of new sectors or end-uses. For structural changes, the Contractor shall provide for COR review a preliminary proposal outlining the approach to be used in performing the work, a list of intermediate and final deliverables, and a schedule and level-of-effort estimate for submission of these deliverables and completion of the work. For both structural and organizational changes, upon COR approval, the Contractor shall develop necessary model refinements (e.g., computer code changes), research industry literature or other sources to provide input and assumptions necessary to implement the changes, and provide a summary in the form of a memo describing the change(s) made, the reason and/or data sources for the change, and a brief review of how key output statistics are affected by the change. For budgeting purposes, the Contractor shall assume that two model methodology structural changes and four organizational changes (e.g., disaggregations or inclusions of new sector or end-use) will be required.

Task 2 Deliverables	**Due Date**
Complete input/output report from model(s).	One no later than April 15, 2011. The second at direction of the COR.
Computer code or similar material developed to implement the model(s) and documentation of input data.	Within 365 days of Task Order initiation.
Overview memo for computer model structural change.	Within 10 business days of receipt of technical direction from the COR.
Summary memo explaining structural change and resulting effect on key outputs.	Within deadline set by Contractor and approved by COR in the overview memo.
Summary memo explaining organizational change and resulting effect on key outputs.	Within deadline set by COR in technical direction.

Task 3: Provide Technical and Analytical Support for Estimating U.S. Inventory and Emissions Projections of ODS and ODS Substitutes for Reporting to the UNFCCC

The Contractor shall utilize the model(s) developed under Task 2 to estimate emissions of

ODS substitutes for reporting to the UNFCCC. The Contractor shall prepare analyses and spreadsheets consistent with the requirements necessary for preparation of submissions to the UNFCCC. In addition to preparing past emission inventories and future emission projections, the Contractor shall prepare explanatory text, uncertainty analyses, quality assurance and quality control reviews, and other items as required. The Contractor shall respond to questions arising from various forms of review of such reports, including questions from U.S. government personnel, UNFCCC in-house and desk reviewers, and the public.

For budgeting purposes, the Contractor shall assume that one full UNFCCC emission inventory submission—including emissions, explanatory text, uncertainty analysis, etc.—will be required in the first year. Also, the Contractor shall assume one UNFCCC emission projection submission is required in the first year.

Task 3 Deliverables	**Due Date**
Work Products for input into UNFCCC report of emissions inventory.	Intermediate work product requests due within 10 business days of receipt of technical direction from the COR. Final complete report of all materials due approximately March 1, 2011.
Work Products for input into UNFCCC report on emission projections.	Within 15 business days of receipt of technical direction from the COR.

Task 4: Provide Technical and Analytical Support for Estimating Data Related to the Phaseout of ODSs and the Uptake of ODS Substitutes

Under technical direction from the COR, the Contractor shall utilize the model(s) developed under Task 2 to provide analysis of the transition from ODSs to substitutes. The Contractor may be asked to provide reports detailing various aspects of the transition, including chemical consumption, buildup of banks, service requirements, emissions, etc. over time and analyzed based on type of chemical, ozone depleting characteristics, global warming characteristics, etc. The Contractor may be asked to utilize the model in conjunction with other data to provide analysis for regions other than the U.S. The Contractor may be asked to perform "what-if" scenarios to analyze effects of various potential changes to market characteristics such as emission rates, chemical used, disposal practices, etc. The Contractor may be asked to provide or report various types of data contained in, assumptions used by, or results generated from the model, with minor additional analysis (e.g., creating of charts, back- or fore-casting of data, explanation of effect of various assumptions, etc.).

For budgeting purposes, it is assumed that the Contractor shall prepare analyses for at least one larger reports, four analyses requiring running scenarios or various versions of the models and/or with significant further analysis, and eight items requiring simple reporting of model data with minimal additional analysis. The Contractor shall assume two of the four analyses and four of the eight items would be performed under a "quick-turn" basis.

Task 4 Deliverables	Due Date
Modeling Work Products for larger reports and analyses.	Per technical direction from the COR.
Modeling Work Products requiring significant additional research and analysis (regular schedule).	Within 10 business days of receipt of technical direction from the COR.
Modeling Work Products requiring significant additional research and analysis (quick-turn schedule).	Within 5 business days of receipt of technical direction from the COR.
Modeling Work Products not requiring significant additional research and analysis (regular schedule).	Within 5 business days of receipt of technical direction from the COR.
Modeling Work Products not requiring significant additional research and analysis (quick-turn schedule).	Within 2 business days of receipt of technical direction from the COR.

Task 5: Improve Model Accuracy

The Contractor shall document the assumptions used by, inputs to, and outputs from the model(s) generated under Task 2. The Contractor shall ensure that the model includes the latest information and data on market trends, emission sources and rates, chemical applications, scientific and technical knowledge, etc. The Contractor shall coordinate model input and assumptions with industry and EPA analysts to ensure the parameters are sound and realistic, utilizing a variety of sources of information. The Contractor shall correlate the model with other available models and information as available, including both "bottom-up" and "top-down" information. In performing these exercises, the Contractor shall prepare a preliminary comparison with a discussion of the results, reasons for differences observed, and proposal for changes to the model, for review by the COR. The Contractor may be directed to make preliminary changes and report results for re-comparison, and such an iterative process may be required for finalizing changes. For budgeting purposes, it is assumed that approximately two such correlation exercises, each encompassing most if not all ODS industrial sectors, and resulting analyses shall be performed.

The Contractor shall create end-use and sector-specific materials, reporting model input assumptions and data as well as output results, for presentation to industry and other contacts. The purpose of these materials will be to solicit feedback from persons knowledgeable of specific industry sectors and end-uses, and then to incorporate that feedback into revisions to the model. The Contractor may be directed to compile, review and summarize the feedback received, research additional data for follow-up to the feedback, propose and implement changes to the model in response to the feedback, and provide comparisons of model output to previous output or other data to judge validity of the changes. For budgeting purposes, it

is assumed that approximately four sets of materials will have to be developed, each to be followed by two rounds of feedback, model adjustment, and revision to the materials for reporting back. Local travel plus one U.S. domestic trip is envisioned.

All final changes to the model input data and assumptions shall be documented in the form of a memo describing the change(s) made, the reason and/or data sources for the change, and a brief description of how key output statistics were affected by the changes. Data sources shall be documented within the input/output report developed under Task 2.

Task 5 Deliverables	**Due Date**
Preliminary comparison and proposal for changes based on other available "bottom-up" and "top-down" information.	Within 5 business days of receipt of technical direction from the COR.
Report of results and re-comparison and summary of results.	Within 5 business days of receipt of technical direction from the COR.
Materials for soliciting or reporting back of feedback.	Within 10 business days of receipt of technical direction from the COR.
Memos describing changes made and resulting effects.	Within 10 business days of receipt of technical direction from the COR.

Task 6: Estimate International Emissions and Analyze Environmental Investment Technologies to Abate Emissions

The Contractor shall analyze available technology options for reducing consumption and/or emissions of high GWP gases. Analyses include the cost associated with each reduction option, an estimation of each potential reduction in metric tons of carbon dioxide equivalent (or other units as determined in writing by the COR) from a consumption and/or emission perspective, and the details associated with executing each option. The Contractor shall conduct literature searches and other research of technologies that appear feasible and offer potential for consumption and/or emissions reductions. These analyses shall include available options in the U.S. as well as in other developed and developing countries.

A computer model shall be developed, enhanced and documented to create the marginal abatement cost (MAC) curves at various discount rates for the U.S. and to provide emission and consumption reduction and cost estimates on a yearly basis (through 2050). In addition, the Contractor shall maintain and revise under direction of the COR a similar model for developing MAC curves for various other countries and global regions.

These models shall be used to generate output necessary to support development of other related tasks, including technical papers, presentations and internal analyses. For budgeting purposes, the Contractor shall assume that three analyses of U.S. MACs and one analysis of

international MACs shall be required, each requiring a memo explaining the input assumptions and results and associated data output files. .

Task 6 Deliverables	**Due Date**
Creation of U.S. MAC model.	Within 90 days of Task Order initiation.
Memo and data output files from U.S. and international MAC models.	Per technical direction from the COR.

Task 7: Support to Implement Technology and Practice Options to Reduce Consumption and/or Emissions from ODS Sectors

The Contractor shall perform analyses and provide support as provided in technical direction from the COR, identifying opportunities for reductions of ODS and ODS substitute consumption and/or emissions in developed and/or developing countries, encompassing emission reductions through responsible use, employment of lower-GWP technologies, use of non-HFC alternatives, and other options. The analysis shall highlight examples of projects, key stakeholders, and strategies to implement the projects, and incentives and responsibilities likely to be required by different types of stakeholders. For these analyses, the Contractor shall also conduct sensitivity analyses as required of substitution decisions and project implementation using the models developed under Task 2, and evaluate the impact of potential technologies and practice options on ODS and ODS substitute consumption and emissions. The Contractor shall also analyze these impacts based on achieving various levels and rates of market penetration in the U.S. and abroad. For budgeting purposes, the Contractor shall assume that support shall be provided for one such initiatives.

Upon technical direction from the COR, these analyses shall include undertaking additional work to support the inception of initiatives to reduce consumption and/or emissions from the ODS and ODS substitute sectors. Upon technical direction from the COR, follow-up work, including preparing papers, making presentations, and facilitating meetings, shall be required in support of the establishment of local, national or international programs. For budgeting purposes, the Contractor shall assume that work to support one initiative shall be provided. For such initiative, local travel plus one U.S. domestic trip is envisioned.

Task 7 Deliverables	**Due Date**
Analyses identifying opportunities for reductions of ODS and ODS substitute emissions.	Per technical direction from the COR.
Work to support consumption and emission reduction initiatives.	Per technical direction from the COR.

III. DISTRIBUTION OF DELIVERABLES

Addressee	Copies
EPA Contracting Officer	1
EPA Task Order COR	1

IV. OTHER REQUIREMENTS

To preclude Contractor bias and undue influence, the work performed by the Contractor and any subsequent deliverables shall NOT include any policy-making decisions or judgments. Any reports submitted by the Contractor that contain recommendations to the EPA shall: explain and rank policy or action alternatives, if any; describe the procedures used to arrive at recommendations; summarize the substance of deliberations; report any dissenting views; list the sources relied upon; and identify and discuss the methods and considerations upon which the recommendations are based. The Contractor shall not make final determinations or policy decisions for the EPA. The EPA will review all Contractor products and make all final decisions regarding assessments and directions of the programs.